

CLAIMS

1. A servo-assisted butterfly valve (1) for an internal combustion engine comprising a valve body (2), a valve seat (4) defined in the valve body (2), a butterfly body (5) adapted to engage the valve seat (4), a shaft (6) on which the butterfly body (5) is keyed and housed by the valve body (2), an electric actuator (3) coupled to the shaft (6) in order to rotate the butterfly body (5) between an open and a closed position of the valve seat (4), an elastic member (23) which is adapted to exert a torque on the shaft (6) which tends to rotate the butterfly body (5) towards a limp-home position and an abutment body (29) which forms an abutment surface for an abutment member (28) of the elastic body (23) in order to stop, in the desired limp-home position, the rotation of the butterfly body (5) caused by the elastic body (23) in the absence of action by the electric actuator (3); the abutment body (29) comprising an eccentric member (35) which is adapted to rotate with respect to the valve body (2) with a predetermined eccentricity about an adjustment axis (31); the butterfly valve (1) being characterized in that the elastic body (23) comprises a first spring (24) provided with a first projection (25) coupled mechanically to the shaft (6) and a second spring (26) provided with a projection (27) coupled mechanically to the valve body (2), the first and second springs (24, 26) being connected together by a curved member (28) which forms the abutment member (28).

2. A valve (1) as claimed in claim 1, in which the

first front spring (24) tends to rotate the shaft (6) with a movement which tends to bring the butterfly body (5) into the closed position, and the second spring (26) tends to rotate the shaft (6) with a movement which tends 5 to bring the butterfly body (5) into the open position, the first spring (24) generating an elastic torque lower than the elastic torque generated by the second spring (26).

3. A valve (1) as claimed in claim 1, in which the 10 abutment body (29) comprises a cylindrical pin (30) which is mounted on the valve body (2) in order to rotate about an adjustment axis (31) and has a free front end (32) and a rear end (33) inserted in a blind housing hole (34) provided in the valve body (2).

15 4. A valve (1) as claimed in claim 3, in which the rear end (33) of the pin (30) has a smooth portion (37) whose diameter is substantially equal to the diameter of the housing hole (34) and a knurled portion (36) whose diameter is slightly greater than the diameter of the 20 housing hole (34), only the smooth portion (37) of the rear end (33) of the pin (30) initially being inserted in the housing hole (34).

5. A valve (1) as claimed in claim 4, in which the knurled portion (36) of the rear end (33) of the pin (30) 25 is adapted to be driven into the housing hole (34) in order to lock the angular position of the pin (30) with respect to the valve body (2).

6. A valve (1) as claimed in claim 3, in which the valve body (2) is shaped so as to enable the provision of 30 the housing hole (34) in different positions in order to

obtain different air flow values in the limp-home position.